P5
The Particle Physics Project Prioritization Panel

Fred Gilman

HEPAP

Alexandria

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Background

- Following the discussion at the last HEPAP meeting, work proceeded on drafting a charge for forming the first Particle Physics Project Prioritization Panel (P5) as a subpanel of HEPAP
- A general charge has been formulated along the general lines of the recommendation in the Long-Range-Planning Subpanel report. P5 will have a role in prioritizing mid-size projects and in updating the roadmap.
- The charge letter has been signed by Ray Orbach and John Hunt and received by Fred Gilman

Charge to HEPAP on Forming P5

Professor Fred Gilman
Physics Department
Carnegie-Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213

Dear Professor Gilman:

In January 2002 the High Energy Physics Advisory Panel (HEPAP) unanimously endorsed the report of the Long-Range Planning Subpanel chaired by Jonathan Bagger and Barry Barish, which created a twenty-year vision for the field of particle physics. One of the central recommendations of the Subpanel was the creation of a Particle Physics Project Prioritization Panel (P5). The Subpanel felt that the U.S. particle physics program would greatly benefit from this new mechanism to assess and prioritize mid-scale initiatives. We agree that, given the significant number of such proposals for exciting new science now on the table, and the overall constraints on financial and human resources, P5 can perform an important function. Thus we are writing to ask you to implement this recommendation.

Charge (continued)

We request that HEPAP form a Subpanel that will be the Particle Physics Project Prioritization Panel. The membership of the Subpanel should represent those communities in particle physics and related fields that can give independent advice on the relative merits of the various projects considered. P5 should evaluate for HEPAP the merits of specific proposals, and recommendations concerning their priority standing in the context of the national high-energy physics program. In particular, this Subpanel should recommend priorities for mid-size (approximately $50M to $600M in total project cost) particle physics projects. These projects should have already received endorsement from their respective laboratories' Program Advisory Committee(s) (if based at a national lab), or an equivalent external peer-review process that can assess the scientific merit of the proposals, such as the Scientific Assessment Group for Experiments in Non-Accelerator Physics.

The funding agencies will convey to you an initial set of proposals for P5 consideration in a separate communication. Projects that may require consideration during the timeframe of the Subpanel will be referred to P5 by the funding agencies as they arise.

Charge (continued)

The proposals referred to P5 will typically have already developed fairly detailed cost estimates. While we do not expect P5 to do an extensive review of costs, to be most helpful, in their report to HEPAP, P5 should comment on the appropriateness of existing cost estimates; indicate what funding levels are expected to be required by these new projects if they are approved (including R&D, engineering design, pre-operations, operations, and possibly construction of new facilities); and evaluate what the scientific impacts would be if sufficient funding is not available during the timeframe of the projects under consideration. As part of its work, the Subpanel will naturally be gathering information about proposed and possible future opportunities. It will use this knowledge, together with its recommendations on projects, to update the project "roadmap" for the field created by the Long-Range Planning Subpanel. That roadmap identified decision points on a given project's path from research and development, to construction, and then to operation.

Charge (continued)

In assessing physics priorities, the Subpanel should weigh physics importance and the overall balance of the field within the context of available resources, including available funding and manpower, timescales, and other programmatic concerns. It will consider projects across particle physics, broadly defined, and across funding sources. Where relevant, the Subpanel should consider the international context of proposals, their relation to the programs of related fields such as nuclear physics and astrophysics, and their broader impacts on science and society. While understanding the broad physics program context in which these projects exist is vital for properly evaluating and prioritizing the individual projects, that context itself is outside the purview of P5. Advice on the general direction and overall priorities for the U.S. particle physics program is properly the responsibility of HEPAP itself, and any advice provided to the Department of Energy and the National Science Foundation should reflect HEPAP's views.

We look forward to the creation of the P5 Subpanel in the near future. We would like to have periodic status reports to HEPAP on the work of the Subpanel beginning in 2003, with a final report by the end of 2004.

Charge (continued)

We wish you success in this challenging and important endeavor.

Sincerely,

Dr. Raymond L. Orbach
Director
Office of Science

Dr. John B. Hunt
Acting Assistant Director
for Mathematical and Physical Science
National Science Foundation

cc: Peter Rosen, SC-20
John O'Fallon, SC-22
Glen Crawford, SC-222
Marsha Marsden, SC-222
Joseph Dehmer, NSF
John Lightbody, NSF
Marvin Goldberg, NSF

Members of the Initial P5

- As per earlier discussion with HEPAP, a subpanel with 12 to 15 members was foreseen, somewhat smaller than most other subpanels
- Members need to cover particle physics through their areas of expertise and to have a broad view over the field

Members of P5 (continued)

Eugene Beier

Pat Burchat

Gary Feldman

Dan Green

Marc Kamionkowski

Boris Kayser

Bill Marciano

Jay Marx

Ritchie Patterson

Charles Prescott

Tor Raubenheimer

Abe Seiden (chair)

Marjorie Shapiro

Mel Shochet

Elizabeth Simmons